

DOCKET NO: 257253US0PCT



IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :

BERND ZASCHKE, ET AL. :

EXAMINER: COONEY, J. M.

SERIAL NO: 10/507,315 :

FILED: SEPTEMBER 10, 2004 :

GROUP ART UNIT: 1711

FOR: GRAFT POLYOLS WITH A  
BIMODAL PARTICLE SIZE  
DISTRIBUTION AND METHOD FOR  
PRODUCING GRAFT POLYOLS OF THIS  
TYPE, IN ADDITION TO THE USE  
THEREOF FOR PRODUCING  
POLYURETHANES

RESPONSE AND REQUEST FOR RECONSIDERATION

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

Responsive to the Official Action of March 27, 2007, reconsideration of the above-identified application is respectfully requested in view of the following remarks. A request for continued examination is filed herewith.

REQUEST FOR RECONSIDERATION

Claims 1-2 and 4-17 remain active in this application.

The claimed invention is directed to a graft polyol having a bimodal particle size distribution, a method for preparing a graft polyol as well as a polyurethane comprising the same.

Graft polyols have been used in the preparation of polyurethane foams to increase the hardness of the resulting polyurethane foam. Graft polyol addition can have an adverse effect on cell opening behavior and flow behavior in the foam mold such that graft polyol containing polyurethanes having good cell opening behavior and flow behavior are sought.

The claimed invention addresses the problem by providing a graft polyol comprising small particles and large particles having a bimodal particle size distribution. Applicants have discovered that a graft polyol having a bimodal particle size distribution in which the **peaks do not overlap** having a small particle and large particle distribution as claimed, provides for advantageous properties when incorporated into a polyurethane composition. Such a graft polyol is nowhere disclosed or suggested in the cited prior art of record.

The rejection of claims 1, 2 and 4-17 under 35 U.S.C. 112, second paragraph is respectfully traversed.

Applicants respectfully submit that the metes and bounds of the term "peaks....do not overlap" are clear to those of ordinary skill in the art. The examiner agrees by stating

**"However, rejection is maintained. Although one can readily ascertain what is meant by 'do not overlap' in the context of the instant invention."** (page 2, last full paragraph of official action of March 27, 2007, emphasis added).

Any position taken by the examiner as to this claim term being indefinite is completely contradicted by the examiner's statement that "one can readily ascertain what is meant by 'do not overlap' in the context of the instant invention." It is clear that this claim term is definite and the examiner agrees. Withdrawal of this ground of rejection is respectfully requested.

As further evidence that the term "do not overlap" would be well understood by those of ordinary skill in the art, applicants enclose herewith the declaration of Dr. Daniel Freidank, a researcher for BASF, the assignee of the above-identified application.

Dr. Freidank prepared six samples of graft polyols according to example 4 of the above-identified specification. The particle size distributions were measured by "laser diffraction analysis" in combination with "polarization intensity differential scattering (PIDS)." The particle size distribution of all six samples were determined. In each of the examples prepared according to example 4, the volume fraction of particles between the two peaks goes to zero and thus, do not overlap. Thus, not only would those of ordinary skill in the art clearly appreciate, based on applicants' disclosure, that the term "do not overlap" means that the volume fraction of particles between two peaks goes to zero, but upon reproduction of the samples from example 4 of applicants' specification would clearly be aware that the volume fraction of the particles between two peaks goes to zero and that the peaks do not overlap in way, shape or form. As the volume fraction goes to zero, there is no need to determine the degree of overlap since when the volume fraction of particles between two peaks goes to zero, there is no overlap between the two peaks. In other words, the degree of overlap which is included within the scope of the claims is zero. Conversely, the degree of overlap which is excluded by the scope of the claims is complete as there is no overlap between the two peaks defining the two particle size distributions. Applicants' claim language can not be more clear in articulating a complete absence of overlap of peaks between the two particle size distributions.

Withdrawal of the rejection under this section of the statute is respectfully requested.

The rejection of claims 16 and 17 under 35 U.S.C. 112, second paragraph is respectfully traversed.

Applicants respectfully submit that the metes and bounds of the term "peaks of the large and small particles measured by a light scattering method" are clear to those of ordinary skill in the art such that the claim is not indefinite.

Applicants respectfully submit that those of ordinary skill in the art can determine whether the particle size distribution overlaps by a light scattering method and it is not necessary to determine which light scattering methods are included or excluded in order to understand the metes and bounds of the claims. Claim 16 simply recites that the peaks of the large and small particles do not overlap, as measured by a light scattering method. Since those of ordinary skill in the art are able to determine particle size distribution by a light scattering method, the metes and bounds of a method in which the particle size distributions do not overlap is clear. Moreover, claim 17 which recites specific light scattering techniques is even more clear. Withdrawal of the rejection under this section of the statute is respectfully requested.

The rejection of claims 1, 2 and 4-17 under 35 U. S. C. 112, first paragraph is respectfully traversed.

Applicants respectfully submit that those of ordinary skill in the art, having read applicants' original disclosure, would be convinced that applicants were in possession of a graft polyol comprising small particles and large particles having a bimodal particle size distribution, in which peaks of the large and small particles do not overlap and in which **the large particles have a larger particle size than the small particles**. Communication of such possession is clear by the recitation of 1) small particles having a particle diameter of from 0.05 to 0.7  $\mu\text{m}$ ; 2) large particles having a particle diameter of from 0.4 to 5.0  $\mu\text{m}$ ; and 3) a **bimodal** particle size distribution. Explicit in the term bimodal is the existence of **two** particle size distributions (e.g. two modes). Having clearly expressed possession of a polyol having two particles size distributions of small particles and large particles, it is also explicit that one particle size distribution is larger and the other is smaller. This is clearly communicated to those of ordinary skill in the art through their understanding of relative size distributions. Accordingly, applicants' amendment of December 28, 2006 to recite "wherein

said large particles have a larger particle size than said small particles” is clearly supported by applicants’ prior description such that the amendment does not introduce new matter into applicants’ specification.

Information contained in any one of the specification, claims or drawings of the application as filed may be added to any other part of the application without introducing new matter. M.P.E.P. § 2163.06

Mere rephrasing of a passage does not constitute new matter. Accordingly, a rewording of a passage where the same meaning remains intact is permissible *In re Anderson*, 471 F.2d 1237, 176 USPQ 331(CCPA 1973) M.P.E.P. § 2136.07 I

As applicants’ amendment merely rephrased the explicit relative sizes of the two particle size distribution, applicants’ amendment did not introduce new matter and accordingly, withdrawal of the rejection under 35 U.S.C. § 112, first paragraph is respectfully requested.

The rejection of claims 1, 2 and 4-17 under 35 U.S.C. § 103(a) over EP 786,480 in view of Perry et al. (U.S. 6,127,443) is respectfully traversed.

None of the cited prior art of record discloses or suggests a graft polyol having a bimodal particle size distribution in which the peaks of the large and small particles do not overlap.

EP ‘480 merely describes a polymer polyol having a relatively small and having a **narrow particle size distribution** (page 1, lines 3-5 and page 3, lines 2-7). In describing a polymer polyol having a small particle size and a narrow particle size distribution, there is no suggestion of a graft polyol having a bimodal particle size distribution in which the peaks do not overlap. A bimodal particle size distribution is not a narrow particle size distribution.

Perry et al. merely describes a polyol component which is **at least bicompositional** having at least one high **molecular weight** portion and one low **molecular weight** portion (column 3, lines 17-19). The molecular weight is a characterization of the length of the polymer chains of the polymer and says nothing about the particle size of polymer particles.

There is no disclosure in this reference as to a bimodal **particle size** distribution in which the peaks do not overlap.

A recitation of a bicompositional composition is not a suggestion of a bimodal particle size distribution. The term bicompositional refers to the qualitative nature of the composition components such that there are components of **two different compositions**. A bimodal particle size describes the average particle size of the particles of the composition such that there are two peaks, describing the **particle size distribution**. Differences in composition do not suggest differences in particle size distribution.

Moreover, even if Perry et al. were to have described a bimodal particle size distribution, there is no motivation to modify the polymer polyol of EP '480 to provide a bimodal distribution as to do so would be contrary to the express teachings of EP '480.

EP '480 describes a polymer polyol having a small particle size and a **narrow particle size distribution**. A narrow particle size distribution is a statement as to the desirability of uniform properties for the polymer particles. A bimodal particle size is inconsistent with a narrow particle size distribution as a bimodal particle size has two particle size distributions and therefore is nearly the opposite of a narrow particles size distribution. It would not be possible to modify the disclosure of EP '480 and provide a bimodal particle size distribution as to do so would destroy the essential teachings of the primary references. Obvious modifications can not fly in the face of the express disclosure of the reference. As such the combination of cited references does not make obvious a graft polyol having a bimodal particle size distribution.

In contrast, the claimed invention is directed to a graft polyol having small and large particles having a bimodal particle size distribution in which the peaks of the large and small particles do not overlap.

While the examiner asserts that a blend of polymers is suggestive of a bimodal particle size distribution, applicants again remind the examiner that the secondary reference suggests the use of two polymer composition, not a two polymers having different particle size distributions. Moreover by combining the teachings of the two references, one would use two polymers **of the same particle size distribution**, providing a bicompositional polyol having a **narrow particle size distribution**. As the combined teachings of the cited prior art fails to disclose or suggest a bimodal particle size distribution in which the peaks do not overlap, the claimed invention is clearly not obvious from these references and accordingly withdrawal of the rejections under 35 U.S.C. § 103(a) is respectfully requested.

Applicants submit that this application is now in condition for allowance and early notification of such action is earnestly solicited.

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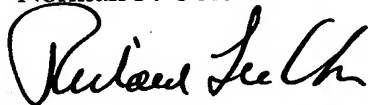
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